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August 14, 2003

Mr. Jim Harris P.E.
Remedial Project Manager
US EPA Montana Operations
10 West 15th Street, Suite 3200
Helena, MT 59626

RE: **Document Outline - Request to Modify Groundwater Treatment System Operations, BNSF Somers, MT (RETEC Project No. BN080-01860)**

Dear Mr. Harris:

On behalf of The Burlington Northern and Santa Fe Railway Company (BNSF), The RETEC Group, Inc. is pleased to submit the attached outline for modification of groundwater treatment system operations at the BNSF Somers, Montana site. The enclosed outline addresses the six components requested in your July 15, 2003 letter to Mr. Dave Smith.

Upon review and approval of the outline (by both the U.S. EPA and the Montana Department of Environmental Quality), we will begin preparation of the final document. Please feel free to contact me at (406) 652-7481 or Chris Cosentini at (303) 271-2129 if you have any questions or comments.

Sincerely,

The RETEC Group, Inc.

Brad Kimble, P.E.
Project Manager

Enclosure
cc: D. Smith/ BNSF
C. Cosentini/RETEC
L. Carlson/ATC

Document Outline
Request to Modify Groundwater Treatment System Operation
BNSF Former Tie Treating Plant, Somers, Montana

1 Introduction - Statement of Purpose and Background to Request

This document is prepared in support of a request to modify groundwater treatment system operation. BNSF is requesting to continue groundwater monitoring, suspend groundwater extraction and injection, and decommission the treatment system. Groundwater monitoring data and groundwater flow modeling, as discussed in the TI Evaluation, will be presented in support of this request.

The TI evaluation demonstrated that hydrogeologic and contaminant barriers at the Somers site preclude installation of an effective groundwater remedy, and that restoration of the surficial aquifer to remediation levels cannot practicably be accomplished within a reasonable timeframe. This document will demonstrate that operation of the groundwater treatment system does not significantly impact the movement of dissolved-phase creosote constituents, rather aquifer and creosote characteristics are the primary impediment.

1.1 Site Background and Description

This section will present the following site background information.

- Site history and tie plant operations
- Summary of previous investigations and source removal activities

1.2 Regulatory History of Selected Groundwater Remedy

This section will introduce a discussion of the response objectives for soil and groundwater and the remedies selected in the ROD. Both soil and groundwater remedial actions, as both are pertinent to a discussion of potential future exposure, will be discussed. A short section for each of these major milestones will follow:

- 1989 Record of Decision – brief summary
- 1992 Explanation of Significant Difference – change in excavation volumes and recognition that groundwater cleanup may require 50 years
- 1993 soil excavation and startup of the LTU
- 1994 Start up of Phase I groundwater treatment system
- 1997 Five Year Review – changes in toxicity information
- 1998 Explanation of Significant Difference – changes to treatment goals
- 1998 Phase II Groundwater Remedy Report - evaluation of groundwater treatment alternatives to meet groundwater treatment goals
- 2003 TI Evaluation – TI evaluation process and conclusions

1.3 Contents of Report

This section will discuss the organization of the document.

Section Figures:	Site Location
	Site Features
Section Tables:	Timeline of site history

2 Groundwater Treatment System Operation

2.1 Description of Groundwater Treatment System

A brief summary of Phase I operations including extraction/injection and location of wells.

2.2 Operational Performance of Groundwater Remedy

This section will present data on the gallons of water extracted and treated and the mass of contaminants removed over the past eight years. Reference the pore volumes needed to meet groundwater treatment objectives and progress of the Phase I system toward meeting the objectives.

The Phase II Groundwater Remedy Remedial Design, as presented in the 2003 TI, will be summarized here to include the alternatives evaluated and the timeframe to meet the ROD groundwater remedial objectives.

2.3 Summary of the TI Evaluation

The TI evaluation was prepared after eight years of remedy implementation. The TI evaluated waiver of ARARs based on technical impracticability of restoring the surficial aquifer to drinking water quality. This section will summarize the aquifer and contaminant characteristics that limit groundwater remediation and include the groundwater conceptual model from TI. This section will emphasize that the TI does not reduce the level of protectiveness of the remedy. Protection of human health and the environment is achieved through a combination of source removal and institutional controls.

Section Figures:	Treatment System Wells
Section Tables:	Mass SVOC and PAH and gallons treated in the Phase I system
	Summary of Alternatives Evaluated in Phase II Report

3 Fate and Transport Analysis

This section will introduce modeling and hydrogeologic analysis to evaluate potential changes in groundwater flow resulting from modifying system operation.

3.1 Aquifer Response to System Modification

This section will summarize the groundwater conceptual model and the aquifer characteristics that retard movement of water and creosote constituents. Potentiometric surface maps before system operation and during times of system shut down for comparison to time periods during which the system was operating, will be presented.

3.2 Fate and Transport Pathways

This section will present the MODFLOW modeling from the TI, which evaluated transport to the Municipal Well and Flathead Lake. To evaluate the most conservative scenario, the model used data collected prior to groundwater remedy implementation for transport and assumed there was no treatment system operating. Travel time estimates were 500 and 5,000 years for transport of 1 µg/L naphthalene to the Municipal Well and Flathead Lake respectively, and do not account for the seasonal fluctuations in groundwater flow.

Section Figures: Potentiometric surface maps from before system operation and during system shut down.

4 Post Modification Monitoring

4.1 Site Wide Groundwater Monitoring

This section will discuss post-modification monitoring. Monitoring will include: quarterly PAH and groundwater elevation monitoring for the first year; after the first year, semi-annual monitoring will be implemented to correspond with high and low groundwater elevations. With demonstrated continued plume stability, monitoring frequency will be decreased on a geometric progression with annual monitoring during high groundwater elevation in years 1, 2, 4, 8, 16 and 30.

4.2 Potential Creosote Accumulation

Monitoring for potential creosote accumulation in former extraction and injection wells and in Wells 93-5S, 88-1, 88-2 and 88-3 will be completed. Wells will be pumped if sufficient creosote accumulation (minimum of 6") is present. Product pumping will be conducted with a portable bottom feed pump to minimize the amount of co-produced groundwater. Product and groundwater will be allowed to settle before a recycling or disposal

determination is made. A flowchart of the monitoring process will be provided.

4.3 Contingency Plan

A confirmed exceedance of ROD levels will trigger notification of MDEQ and EPA, re-sampling, investigation of source, continued monitoring and development of a corrective action with the MDEQ and EPA.

5 Summary

This section will summarize the document as follows.

- Groundwater treatment operations have been conducted since 1994. At the completion of eight years of treatment, the remedy effectiveness was evaluated along with alternatives to meet the treatment goals as specified in the ROD. Through the evaluation of alternatives in the Phase II Report it was determined that available groundwater treatment technologies are not able to meet the groundwater treatment goals in a reasonable time. The Phase I system is not a significant factor in the retardation of creosote constituents. Aquifer and creosote characteristics are the primary impediment to movement of dissolved creosote constituents. Consequently, BNSF requests to suspend extraction/injection based on aquifer and DNAPL characteristics and modify continued groundwater monitoring.

- Human health and the environment are protected through previous source removal and institutional controls. Fate and transport modeling support the conclusion that the presence of DNAPL and dissolved constituents in the aquifer does not present a significant threat to the water quality of the municipal water supply or Flathead Lake.

- Once a determination on this request has been made, a work plan for modifications to operation of the groundwater treatment system and a groundwater monitoring plan will be prepared for agency review.